

What is claimed is:

1. A server based broadcast system for transmitting and receiving a data via a transmission path, said server based broadcast system comprising a data transmitting device and a receiving terminal, wherein

said data transmitting device comprising:

a content storing section for storing and administrating contents to be transmitted;

a content correlation processing section for correlating the contents with each other based on a user's instruction;

a content appendix information generating section, communicating with said content correlation processing section, for generating private content information as appendix information inherent to each content as well as common content information as appendix information common to a plurality of contents; and

a content meta-data generating section for producing a meta-data relating to a content based on said private content information and said common content information produced by said content appendix information generating section, and

said receiving terminal comprises:

a common content information extracting section for receiving said content meta-data produced from said data transmitting device and for extracting said common content information involved in the received content meta-data;

a content grouping section for making a content group consisting of a plurality of contents received from said data transmitting device according to said common content information extracted by said common content information extracting section; and

a content administrating section for storing and administrating the contents belonging to the same content group.

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said common content information comprises compulsory information as a data required when said receiving terminal provides a content service to a user.

3. A server based broadcast system for transmitting and receiving a data via a transmission path, said server based broadcast system comprising a data transmitting device and a receiving terminal, wherein

    said data transmitting device comprising:

        a content storing section for storing and administrating contents to be transmitted;

        a content correlation processing section for analyzing a correlation between the contents stored in said content storing section and performing related processing according to an analysis result;

        a content appendix information generating section, communicating with said content correlation processing section, for generating private content information as appendix information inherent to each content as well as common content information as appendix information common to a plurality of contents; and

        a content meta-data generating section for producing a meta-data relating to a content based on said private content information and said common content information produced by said content appendix information generating section, and

    said receiving terminal comprises:

        a common content information extracting section for receiving said content meta-data produced from said data transmitting device and for extracting said common content information involved in the received content meta-data;

        a content grouping section for making a content group consisting of a plurality of contents received from said data transmitting device according to said common content information extracted by said common content information extracting section; and

        a content administrating section for storing and administrating the contents belonging to the same content group.

4. The server based broadcast system in accordance with claim 3, wherein said common content information comprises compulsory information as a data required when said receiving terminal provides a content service to a user.

5        5. A data transmitting device used in a server based broadcast system for transmitting a data via a transmission path, comprising:

      a content storing section for storing and administrating contents to be transmitted;

10      a content correlation processing section for correlating the contents with each other based on a user's instruction;

      a content appendix information generating section, communicating with said content correlation processing section, for generating private content information as appendix information inherent to each content as well as common content information as appendix information common to a plurality of contents; and

      a content meta-data generating section for producing a meta-data relating to a content based on said private content information and said common content information produced by said content appendix information generating section.

20      6. The data transmitting device in accordance with claim 5, wherein said common content information comprises compulsory information as a data required when a receiving terminal associated with said data transmitting device provides a content service to a user.

25      7. A data transmitting device used in a server based broadcast system for transmitting a data via a transmission path, comprising:

      a content storing section for storing and administrating contents to be transmitted;

30      a content correlation processing section for analyzing a correlation between the contents stored in said content storing section and performing related processing according to an analysis result;

5            a content appendix information generating section, communicating with said content correlation processing section, for generating private content information as appendix information inherent to each content as well as common content information as appendix information common to a plurality of contents; and

10            a content meta-data generating section for producing a meta-data relating to a contend based on said private content information and said common content information produced by said content appendix information generating section.

15            8. The data transmitting device in accordance with claim 7, wherein said common content information comprises compulsory information as a data required when a receiving terminal associated with said data transmitting device provides a content service to a user.

20            9. A receiving terminal used in a server based broadcast system for receiving a data via a transmission path, comprising:

25            a common content information extracting section for receiving a content meta-data produced from a data transmitting device and for extracting common content information involved in the received content meta-data;

30            a content grouping section for making a content group consisting of a plurality of contents received from said data transmitting device according to said common content information extracted by said common content information extracting section; and

25            a content administrating section for storing and administrating the contents belonging to the same content group.

30            10. A method for transmitting and receiving a data via a transmission path based on a server based broadcast system, comprising:

35            a step of storing and administrating contents to be transmitted when a data is transmitted;

- 5            a step of analyzing a correlation between the contents;  
          a step of performing related processing according to an analysis result;  
          a step of generating private content information as appendix information  
inherent to each content as well as common content information as appendix  
information common to a plurality of contents;
- 10           a step of producing a content meta-data as a meta-data relating to a  
content based on said private content information and said common content  
information;  
          a step of receiving said content meta-data when said data is received;  
          a step of extracting said common content information involved in the  
received content meta-data;
- 15           a step of making a content group consisting of a plurality of received  
contents according to said common content information; and  
          a step of storing and administrating the contents belonging to the same  
content group.
- 20           11. A recording medium storing a software program for transmitting and  
receiving a data via a transmission path based on a server based broadcast  
system, comprising:  
          a step of storing and administrating contents to be transmitted when a data  
is transmitted;  
          a step of analyzing a correlation between the contents;  
          a step of performing related processing according to an analysis result;  
          a step of generating private content information as appendix information  
inherent to each content as well as common content information as appendix  
information common to a plurality of contents;
- 25           a step of producing a content meta-data as a meta-data relating to a  
content based on said private content information and said common content  
information;  
          a step of receiving said content meta-data when said data is received;  
          a step of extracting said common content information involved in the

received content meta-data;

a step of making a content group consisting of a plurality of received contents according to said common content information; and

5 a step of storing and administrating the contents belonging to the same content group.

12. A software program of a computer for transmitting and receiving a data via a transmission path based on a server based broadcast system, said software program comprising:

10 a step of storing and administrating contents to be transmitted when a data is transmitted;

a step of analyzing a correlation between the contents;

a step of performing related processing according to an analysis result;

15 a step of generating private content information as appendix information inherent to each content as well as common content information as appendix information common to a plurality of contents;

a step of producing a content meta-data as a meta-data relating to a content based on said private content information and said common content information;

20 a step of receiving said content meta-data when said data is received;

a step of extracting said common content information involved in the received content meta-data;

a step of making a content group consisting of a plurality of received contents according to said common content information; and

25 a step of storing and administrating the contents belonging to the same content group.

13. A method for transmitting a data via a transmission path based on a server based broadcast system, comprising:

30 a step of storing and administrating contents to be transmitted when a data is transmitted;

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- 5            a step of analyzing a correlation between the contents;  
          a step of performing related processing according to an analysis result;  
          a step of generating private content information as appendix information  
inherent to each content as well as common content information as appendix  
information common to a plurality of contents; and
- 10          a step of producing a content meta-data as a meta-data relating to a  
content based on said private content information and said common content  
information.
- 15          14. A recording medium for storing a software program for transmitting  
a data via a transmission path based on a server based broadcast system,  
comprising:
- 20            a step of storing and administrating contents to be transmitted when a data  
is transmitted;  
          a step of analyzing a correlation between the contents;  
          a step of performing related processing according to an analysis result;  
          a step of generating private content information as appendix information  
inherent to each content as well as common content information as appendix  
information common to a plurality of contents; and
- 25            a step of producing a content meta-data as a meta-data relating to a  
content based on said private content information and said common content  
information.
- 30          15. A software program of a computer for transmitting a data via a  
transmission path based on a server based broadcast system, said software  
program comprising:  
          a step of storing and administrating contents to be transmitted when a data  
is transmitted;  
          a step of analyzing a correlation between the contents;  
          a step of performing related processing according to an analysis result;  
          a step of generating private content information as appendix information

inherent to each content as well as common content information as appendix information common to a plurality of contents; and

5 a step of producing a content meta-data as a meta-data relating to a content based on said private content information and said common content information.

10 16. A method for receiving a data via a transmission path based on a server based broadcast system, comprising:

a step of receiving a content meta-data when a data is received;

15 a step of extracting common content information involved in the received content meta-data;

a step of making a content group consisting of a plurality of received contents according to said common content information; and

20 a step of storing and administrating the contents belonging to the same content group.

25 17. A recording medium storing a software program for receiving a data via a transmission path based on a server based broadcast system, comprising:

a step of receiving a content meta-data when a data is received;

20 a step of extracting common content information involved in the received content meta-data;

a step of making a content group consisting of a plurality of received contents according to said common content information; and

25 a step of storing and administrating the contents belonging to the same content group.

30 18. A software program of a computer for receiving a data via a transmission path based on a server based broadcast system, said software program comprising:

a step of receiving a content meta-data when a data is received;

a step of extracting common content information involved in the received

content meta-data;

a step of making a content group consisting of a plurality of received contents according to said common content information; and

5 a step of storing and administrating the contents belonging to the same content group.

19. A server based broadcast system comprising:

a receiver automatically storing broadcasted contents, each content being associated with a meta-data comprising private information inherent to said each content as well as common information applicable to a plurality of contents;

10 said receiver making a group of contents having the same common information involved in said meta-data; and

15 said receiver allowing a user to enjoy playback of an intended service element involved in the stored contents.

20. The server based broadcast system in accordance with claim 19, wherein said common information includes information designating all of the contents whose meta-data have the same common information.

21. The server based broadcast system in accordance with claim 19, wherein said common information includes information designating compulsory contents selected from the contents whose meta-data have the same common information, and playback of a group of stored contents is feasible only when said receiver has stored all of said compulsory contents.

25. The server based broadcast system in accordance with claim 19, wherein said private information includes information designating a receiver level, while said receiver checks said private information of a received content according to said meta-data attached thereto and stores said received content only when said private information of the received content designates its own receiver level.

23. The server based broadcast system in accordance with claim 19, wherein said meta-data is multiplexed with a content and carried on a carousel for data broadcasting.

5        24. The server based broadcast system in accordance with claim 19, wherein said receiver renews an already stored content by a newly received content when the private information of a meta-data attached to said newly received content has the same content identifying information as that of said already stored content.

10      25. The server based broadcast system in accordance with claim 21, wherein said common information includes an acquirement time limit of said compulsory contents, while said receiver cancels storing the contents whose meta-data have the same common information as that of said compulsory contents when fails to acquire all of said compulsory contents by said acquirement time limit.

15      26. The server based broadcast system in accordance with claim 19, wherein said common information or said private information includes expiration time information, while said receiver deletes a stored content when its expiration time has passed.

25      27. The server based broadcast system in accordance with claim 19, wherein said common information includes a filtering pattern, while said receiver checks said common information of the meta-data attached to a received content and stores the received content only when a filtering pattern of said received content agrees with a filtering pattern kept in said receiver.

30      28. The server based broadcast system in accordance with claim 19, wherein said meta-data includes digital sign information of a service provider, while said receiver checks the digital sign information of a received content and

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stores said received content only when the digital sign information represents an authenticated information provider.

5            29. A server based broadcast system comprising:

a receiver receiving information necessary to operate said server based broadcast system as a meta-content equivalent to a content composing a substance of said server based broadcast service;

10            said receiver automatically storing said meta-content and said content composing the substance of said server based broadcast service in a storage; and

15            said receiver allowing a user to enjoy playback of an intended service element involved in the stored contents with reference to said meta-content.

20            30. The server based broadcast system in accordance with claim 29, wherein said content composing the substance of said server based broadcast service and said meta-content are carried on a data carousel for data broadcasting.

25            31. The server based broadcast system in accordance with claim 29, wherein said meta-content is used to transmit service component information including information relating to said content as well as information relating to a hierarchical structure of a server based broadcast service provided by a service provider.

30            32. The server based broadcast system in accordance claim 29, wherein said meta-content is used to transmit information relating to renewal of said content.

33. The server based broadcast system in accordance claim 29, wherein each of said content and said meta-content links with other content or meta-content so as to compose a content group, and each of said content and said

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meta-content composing said content group is presented only when a predetermined number of contents or meta-contents of said content group have been stored in said storage of said receiver.

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34. The server based broadcast system in accordance with claim 31, wherein said receiver displays a screen inquiring whether or not a user utilizes a service, and said receiver controls reception of said content based on a service selected by the user.

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35. The server based broadcast system in accordance with claim 34, wherein said receiver acquires information relating to a required storage capacity of information based on said service component information corresponding to the selected service, and secures said required storage capacity.

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36. The server based broadcast system in accordance with claim 34, wherein said receiver acquires information relating to a public key based on said service component information corresponding to the selected service, and uses said public key for authentication.

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37. The server based broadcast system in accordance with claim 33, wherein a meta-data is attached to said meta-content, said meta-data comprises private information inherent to said meta-content and common information applicable to a plurality of meta-contents composing said content group.

38. The server based broadcast system in accordance with claim 37, wherein said meta-data attached to said meta-content of said service component information includes said private information or said common information describing expiration time information.

39. The server based broadcast system in accordance with claim 37, wherein said meta-data attached to said meta-content of said service component

information includes said private information describing filtering information.

40. A method for transmitting a data of a server based broadcast system, comprising the steps of:

5 producing a meta-data comprising private information inherent to said each content as well as common information applicable to a plurality of contents; and

broadcasting said meta-data together contents composing a server based broadcast service.

10 41. A method for transmitting a data of a server based broadcast system, comprising the steps of:

transmitting information necessary to operate said server based broadcast system as a meta-content equivalent to a content composing a substance of a server based broadcast service; and

broadcasting said meta-content together with said content composing the substance of a server based broadcast service.

20 42. A method for receiving a data of a server based broadcast system, comprising the steps of:

automatically storing broadcasted contents; and

allowing a user to enjoy playback of an intended service element involved in the stored contents with reference to private information inherent to each content as well as common information applicable to a plurality of contents.

25 43. A method for receiving a data of a server based broadcast system, comprising the steps of:

automatically storing information necessary to operate said server based broadcast system as a meta-content equivalent to a content composing a substance of a server based broadcast service; and

allowing a user to enjoy playback of an intended service element involved

in the stored contents with reference to said meta-content.

44. A receiver used for a server based broadcast system, comprising:  
a receiving section for receiving broadcasted data;

5 a storage administrating section for administrating the contents composing  
a server based broadcast service based on common content information and  
private content information attached to each content of the server based  
broadcast service;

10 a receiving condition administrating section for administrating receiving  
conditions of each content of the server based broadcast service;

a storage section for storing the contents of the server based broadcast  
service; and

a selection and presenting section for selecting a content from the storage  
section and presenting a selected content.

45. The receiver used for a server based broadcast system in accordance  
with claim 44, wherein said receiving section receives a carousel having an  
information provider identification.

20 46. The receiver used for a server based broadcast system in accordance  
with claim 44, wherein said storage administrating section analyzes said common  
content information of each content received by said receiving section to confirm  
whether or not a service type is service component information.

25 47. The receiver used for a server based broadcast system in accordance  
with claim 46, wherein said common content information describes compulsory  
contents and said private content information describes a content identifier of  
each compulsory content, and said storage administrating section transmits the  
information of said compulsory contents as well as said content identifier of each  
30 compulsory content to said receiving condition administrating section when the  
service type of a received content is service component information.

48. The receiver used for a server based broadcast system in accordance with claim 47, wherein said storage administrating section causes a cache to temporarily store said compulsory contents.

5 49. The receiver used for a server based broadcast system in accordance with claim 47, wherein said receiving condition administrating section creates a compulsory content identifier list and a received content identifier list based on said common content information.

10 50. The receiver used for a server based broadcast system in accordance with claim 49, wherein said storage administrating section transfers the received contents from said cache to said storage section and informs said selection and presenting section of effectiveness or validity of service component information when all of the contents described in said compulsory content identifier list are registered as having been already received in the received content identifier list, and when all of the compulsory contents are stored in said cache.

15 20 51. The receiver used for a server based broadcast system in accordance with claim 44, wherein said selection and presenting section presents a list of element services of each information provider on its screen to allow a user to select a favorable element service.

25 52. The receiver used for a server based broadcast system in accordance with claim 51, wherein said storage administrating section causes said storage section to secure a storage area for storing the contents of selected element service based on service component information described in said common content information.

30 53. The receiver used for a server based broadcast system in accordance with claim 44, wherein said storage administrating section analyzes said common content information of each content of an information provider received by said

receiving section to obtain a service identifier described in said common content information.

5        54. The receiver used for a server based broadcast system in accordance with claim 53, wherein said storage administrating section accesses said receiving condition administrating section to confirm the receiving conditions of a service identified by said service identifier.

10      55. The receiver used for a server based broadcast system in accordance with claim 53, wherein said common content information includes acquirement time limit of a service identified by said service identifier.

15      56. The receiver used for a server based broadcast system in accordance with claim 55, wherein storage of the contents of said service is canceled when all of the compulsory contents are not stored by said acquirement time limit.

20      57. The receiver used for a server based broadcast system in accordance with claim 55, wherein said storage administrating section deletes already received contents from said cache and deletes corresponding service receiving conditions from said receiving condition administrating section when all of the compulsory contents are not stored by said acquirement time limit.

25      58. The receiver used for a server based broadcast system in accordance with claim 44, further comprising a receiver's private information administrating section for administrating level information of said receiver,

wherein said storage administrating section compares each receiver level contained in the private information of a received content with the level information of said receiver, and

30      said received content is stored in said storage section only when any one of receiver levels contained in said private information agrees with the level information of said receiver.